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## NOTICE OF ALLOWANCE AND FEE(S) DUE

45594 7590 05/28/2009

NVIDIA C/O MURABITO, HAO & BARNES LLP  
TWO NORTH MARKET STREET  
THIRD FLOOR  
SAN JOSE, CA 95113

EXAMINER

LEE, CHUN KUAN

ART UNIT

PAPER NUMBER

2181

DATE MAILED: 05/28/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/725,980

12/01/2003

Radoslav Danilak

NVID-P000817

4928

TITLE OF INVENTION: BYPASS METHOD FOR EFFICIENT DMA DISK I/O

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$0	\$0	\$1510	08/28/2009

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

### HOW TO REPLY TO THIS NOTICE:

#### I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

# **PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE  
Commissioner for Patents  
P.O. Box 1450  
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or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

45594 7590 05/28/2009

**NVIDIA C/O MURABITO, HAO & BARNES LLP  
TWO NORTH MARKET STREET  
THIRD FLOOR  
SAN JOSE, CA 95113**

## **Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/725,980 12/01/2003 Radoslav Danilak NVID-P000817 4928

TITLE OF INVENTION: BYPASS METHOD FOR EFFICIENT DMA DISK I/O

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional NO \$1510 \$0 \$0 \$1510 08/28/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
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LEE, CHUN KUAN 2181 710-033000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 \_\_\_\_\_
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 \_\_\_\_\_
- 3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_

Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_

Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,980	12/01/2003	Radoslav Danilak	NVID-P000817	4928
45594	7590	05/28/2009	EXAMINER	
NVIDIA C/O MURABITO, HAO & BARNES LLP TWO NORTH MARKET STREET THIRD FLOOR SAN JOSE, CA 95113			LEE, CHUN KUAN	
			ART UNIT	PAPER NUMBER
			2181	
DATE MAILED: 05/28/2009				

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 106 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 106 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

**Notice of Allowability**

Application No.

10/725,980

Applicant(s)

DANILAK, RADOSLAV

Examiner

Chun-Kuan Lee

Art Unit

2181

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 03/23/2009.
2. ☒ The allowed claim(s) is/are 1-23.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application                      |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date <u>04/20/2009</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                     | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

/Alford W. Kindred/  
Supervisory Patent Examiner, Art Unit 2181

## **DETAILED ACTION**

### **I. EXAMINER'S AMENDMENTS**

#### **OPTIONS AVAILABLE TO THE APPLICANT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by **37 CFR § 1.312**. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

#### **AUTHORIZATION FOR THE CORRECTIONS BY THE EXAMINER**

2. Authorization for this examiner's amendment was given in a telephone interview with Amir Tabarrok, having Reg. No. 57,137, on 5/18/2009. Accordingly, since a complete record of the interview has been incorporated in the instant examiner's amendment, no separate interview summary form is included in the instant office letter **MPEP § 713.04**.

#### **CORRECTIONS MADE IN THE APPLICATION**

3. The application has been amended as following:

##### **IN THE CLAIMS:**

The below described amendments to the claims are necessary to further clarify the claimed invention.

**NOTE:** The claims amended by this examiner's amendment have been referred to by their original claim number and, if renumbered at time of allowance, also by the new number located in parentheses as required by **MPEP § 1302.04(g)**.

In claim 9 (renumbered as claim 11), lines 11-12, "... structures comprising the disk transaction in response ..." should be replaced with "... structures comprising a disk transaction in response ...-.

In claim 14 (renumbered as claim 16), lines 16-17, "... structures comprising the disk transaction in response ..." should be replaced with "... structures comprising a disk transaction in response ...-.

## **II. DISTINGUISHING FEATURES RECITED IN THE CLAIMS**

### **ALLOWABLE SUBJECT MATTER**

4. Claims 1-23 are allowed.

The following is an **Examiner's Statement of Reasons for Allowance**, See **MPEP 1302.14:**

5. The primary reason for allowance of claim 1 in the instant application is the combination with the inclusion in the claim that there are "**... A method for disk I/O (input output) in a computer system, comprising:**

**upon receiving a request for said disk I/O from an application executing on the computer system, transferring a command to a disk controller, the command causing a start up of a disk drive coupled to the disk controller;**

**subsequent to transferring the command causing the start up and before completion of said start up, preparing disk transaction information by packaging a plurality of data structures comprising a disk transaction in response to said command;**

**in response to said preparing said disk transaction information, transferring the disk transaction information to the disk controller; and**

**in response to said transferring said disk transaction information to said disk controller, implementing said disk I/O, wherein the disk controller uses the disk transaction information to control the disk drive ..."**

The prior art of record including the disclosures of Applicant's Admitted Prior Art (AAPA), Maleck (US Patent 6,681,281) and Wilcox (US Patent 6,185,634) neither anticipates nor renders obvious the above recited combination. Because claims 1-8 and 22-23 (renumbered as claims 1-10) depend directly or indirectly on independent claim 1, these claims are considered allowable for at least the same reasons noted above.

6. The primary reason for allowance of claim 9 (renumbered as claim 11) in the instant application is the combination with the inclusion in the claim that there are "**... A computer readable media having computer readable code which when executed**

Art Unit: 2181

by a processor of a computer system cause the computer system to implement a bypass method for efficient disk I/O (input output), comprising:

upon receiving a request for said disk I/O from an application executing on the computer system, transferring a command to a disk controller, the command causing a start up of a disk drive coupled to the disk controller;

subsequent to transferring the command causing the start up and before completion of said start up, preparing disk transaction information by packaging a plurality of PRD (physical region descriptor) data structures and a plurality of CPB (command parameter block) data structures comprising a disk transaction in response to said command;

accessing a bridge component controlling a bus coupled to the disk controller;

in response to said preparing said disk transaction information, transferring the disk transaction information to a plurality of bypass registers of the disk controller via the bridge component; and

in response to said transferring said disk transaction information to said disk controller, implementing said disk I/O, wherein the disk controller processes the disk transaction information to control the disk drive ..."

The prior art of record including the disclosures of Applicant's Admitted Prior Art (AAPA), Maleck (US Patent 6,681,281) and Wilcox (US Patent 6,185,634) neither anticipates nor renders obvious the above recited combination. Because claims 10-13 (renumbered as claims 12-15)



Art Unit: 2181

depend directly or indirectly on independent claim 9, these claims are considered allowable for at least the same reasons noted above.

7. The primary reason for allowance of claim 14 (renumbered as claim 16) in the instant application is the combination with the inclusion in the claim that there are "... A computer system for implementing a bypass method for efficient disk I/O (input output), comprising:

a processor;

a system memory coupled to the processor;

a bridge component coupled to the processor; and

a disk controller coupled to the bridge component, the disk controller including a plurality of bypass registers, wherein the processor executes software code stored in the system memory, the software code causing the computer system to implement a method comprising:

upon receiving a request for said disk I/O from an application executing on the computer system, transferring a command from the processor to the disk controller, the command causing a start up of a disk drive coupled to the disk controller;

subsequent to transferring the command causing the start up and before completion of said start up, preparing disk transaction information by packaging a plurality of data structures comprising the disk transaction in response to said command;

Art Unit: 2181

**in response to said preparing said disk transaction information,**  
**transferring the disk transaction information to the bypass registers of the disk**  
**controller; and**

**in response to said transferring said disk transaction information to said**  
**disk controller, implementing said disk I/O, wherein the disk controller processes**  
**the disk transaction information to control the disk drive ...**" The prior art of record

including the disclosures of Applicant's Admitted Prior Art (AAPA), Maleck (US Patent 6,681,281) and Wilcox (US Patent 6,185,634) neither anticipates nor renders obvious the above recited combination. Because claims 15-21 (renumbered as claims 17-23) depend directly or indirectly on independent claim 14, these claims are considered allowable for at least the same reasons noted above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

**CONCLUSION**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chun-Kuan (Mike) Lee whose telephone number is (571) 272-0671. The examiner can normally be reached on 8AM to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alford Kindred can be reached on (571) 272-4037. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C.K.L./

May 18, 2009

/Alford W. Kindred/

Supervisory Patent Examiner, Art Unit 2181

Chun-Kuan (Mike) Lee  
Examiner  
Art Unit 2181